

[0026] Having thus described the invention, what is claimed is:

- 1 1. In a harvesting machine having a frame adapted for movement over the
2 ground, the frame having a front end, an opposing rear end, and an operator's
3 platform, an elongate crop harvesting header having a first end and a second
4 opposing end, the first and second ends defining the length of the elongate
5 header, the header supported at first and second support points, intermediate the
6 first and second ends, by the frame across the front end of the frame for
7 generally vertical movement relative to the ground, the improvement comprising:
8 a header lift and flotation system interconnecting the header and the frame
9 for selectively raising and lowering the header relative to the ground and setting
10 flotation parameters, the header lift and flotation system including:
11 left and right hand hydraulic cylinders interconnecting the frame and the
12 header adjacent the respective first and second support points;
13 a hydraulic fluid reservoir;
14 substantially independent left and right hand electro-hydraulic circuits,
15 including valves operated by electrical signals, interconnecting the hydraulic fluid
16 reservoir and the respective left and right hand hydraulic cylinders;
17 left and right hand manually manipulated switches;
18 an electronic programmable controller interconnecting the switches and
19 the valves such that independent manipulation of the switches causes the
20 controller to emit electrical signals to the valves to establish independent flotation
21 and lift settings therefor.
- 1 2. The improvement of claim 1, wherein:
2 each left and right electro-hydraulic circuit further includes an hydraulic
3 pump and hydraulic accumulator.

- 1 3. The improvement of Claim 2, wherein:
2 the switches are located on the operator's platform.
- 1 4. The improvement of claim 3, wherein:
2 the switches are rocker switches.
- 1 5. The improvement of claim 4, wherein:
2 each of the left and right hand switches has a first position that signals the
3 controller to allow hydraulic oil to enter the respective accumulator to reduce
4 header contact force with the ground.
- 1 6. The improvement of claim 5, wherein:
2 each of the left and right hand switches has a second position that signals
3 the controller to allow hydraulic oil to exit the respective accumulator to increase
4 header contact force with the ground.
- 1 7. The improvement of claim 6, wherein
2 the left and right hand switches operate independently of each other.
- 1 8. In a harvesting machine having a frame adapted for movement over the
2 ground, the frame having a front end, an opposing rear end, and an operator's
3 platform, an elongate crop harvesting header having a first end and a second
4 opposing end, the first and second ends defining the length of the elongate
5 header, the header supported at first and second support points, intermediate the
6 first and second ends, by the frame across the front end of the frame for
7 generally vertical movement relative to the ground, the improvement comprising:
8 a header lift and flotation system interconnecting the header and the frame
9 for selectively raising and lowering the header relative to the ground and setting
10 flotation parameters, the header lift and flotation system including:

1 left and right hand hydraulic cylinders interconnecting the frame and the
2 header adjacent the respective first and second support points;
3 a hydraulic fluid reservoir;
4 substantially independent left and right hand electro-hydraulic circuits,
5 including valves operated by electrical signals, interconnecting the hydraulic fluid
6 reservoir and the respective left and right hand hydraulic cylinders;
7 left and right hand manually manipulated switches;
8 an electronic programmable controller interconnecting the switches and
9 the valves such that independent manipulation of the switches causes the
10 controller to emit electrical signals to the valves to establish independent flotation
11 and lift settings for the left and right hand hydraulic cylinders.

1 9. The improvement of claim 8, wherein:
2 each left and right electro-hydraulic circuit further includes an hydraulic
3 pump and hydraulic accumulator.

1 10. The improvement of Claim 9, wherein:
2 the switches are located on the operator's platform and are rocker-type
3 switches.

1 11. The improvement of claim 10, wherein:
2 each of the left and right hand switches has a first position that signals the
3 controller to allow hydraulic oil to enter the respective accumulator to reduce
4 header contact force with the ground, and
5 each of the left and right hand switches has a second position that signals
6 the controller to allow hydraulic oil to exit the respective accumulator to increase
7 header contact force with the ground.

- 1 12. The improvement of claim 11 wherein:
2 the left and right hand switches operate independently of each other.
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- 1 13. A crop harvesting machine comprising:
2 a self-propelled frame adapted for movement over the ground, the frame
3 having a front end, an opposing rear end;
4 an operator's platform affixed to and supported by the frame;
5 an elongate crop harvesting header having a first end and a second
6 opposing end, the first and second ends defining the length of the elongate
7 header, the header supported at first and second support points, intermediate the
8 first and second ends, by the frame across the front end of the frame for
9 generally vertical movement relative to the ground;
10 a header lift and flotation system interconnecting the header and the frame
11 for selectively raising and lowering the header relative to the ground and setting
12 flotation parameters, the header lift and flotation system including:
13 left and right hand hydraulic cylinders interconnecting the frame
14 and the header adjacent the respective first and second support points;
15 a hydraulic fluid reservoir;
16 substantially independent left and right hand electro-hydraulic
17 circuits, including valves operated by electrical signals, interconnecting the
18 hydraulic fluid reservoir and the respective left and right hand hydraulic cylinders;
19 left and right hand manually manipulated switches; and
20 an electronic programmable controller interconnecting the switches and
21 the valves such that independent manipulation of the switches causes the
22 controller to emit electrical signals to the valves to establish independent flotation
23 and lift settings for the left and right hand hydraulic cylinders.
- 1 14. The crop harvesting machine of claim 13, wherein:
2 each left and right electro-hydraulic circuit further includes an hydraulic
3 pump and single hydraulic accumulator.

1 15. The improvement of Claim 14, wherein:
2 the switches are located on the operator's platform.

1 16. The improvement of claim 13, wherein:
2 the switches are rocker switches;
3 each of the left and right hand switches has a first position that signals the
4 controller to allow hydraulic oil to enter the respective accumulator to reduce
5 header contact force with the ground; and
6 each of the left and right hand switches has a second position that signals
7 the controller to allow hydraulic oil to exit the respective accumulator to increase
8 header contact force with the ground.

1 17. The improvement of claim 16, wherein
2 the left and right hand switches operate independently of each other.